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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,730	09/17/2001	Takahisa Aoyama	L9289.01185	8946

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EXAMINER

HOOSAIN, ALLAN

ART UNIT PAPER NUMBER

2645

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/936,730

Applicant(s)

AOYAMA, TAKAHISA

Examiner

Allan Hoosain

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 6-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/17/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 6-11 are rejected under 35 U.S.C. 102(e) as being anticipated by **Ishii et al.** (US 6,714,584).

As to Claims 6,9, with respect to Figures 1-4, **Ishii** teaches an array antenna base station apparatus comprising:

a notifier that recognizes whether or not a communication is going to be reopened (Figure 4, and Col. 5, lines 57-64 and Col. 6, lines 40-43);

a memory that stores a reception weight calculated during a previous communication (Col. 5, lines 59-64 and Col. 6, lines 1-7);

a demodulator that demodulates an incoming direction (a signal) transmitted from a mobile unit (an active communication terminal apparatus) and obtains a demodulation signal (Figure 1 and Col. 1, lines 15-18); and

an adaptive signal processor that performs adaptive signal processing with the demodulation signal and calculates a reception weight, multiplies the demodulation signal by

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said reception weight, and, during a reopened communication, multiplies the demodulation signal by the reception weight in the memory (Col. 6, lines 1-10, 40-57).

As to Claims 7,10, **Ishii** teaches the array antenna base station apparatus of claim 6, further comprising a decider that decides whether or not the reception weight in the memory is applicable to the adaptive signal processing in the adaptive signal processor in the reopened communication, wherein, when the decider decides that the reception weight in the memory is applicable, the adaptive signal processor performs the adaptive signal processing using said weight in the memory, and, when the decider decides that said reception weight in the memory is not applicable, the adaptive signal processor calculates a new weight (Col. 3, lines 25-30).

As to Claims 8,11, **Ishii** teaches the array antenna base station apparatus of claim 7, further comprising a tracker that measures moving state of the communication terminal apparatus using the reception weight, wherein the decider generates the reception weight in the reopened communication using the reception weight in the memory and the moving state (Col. 3, lines 25-30 and Col. 5, lines 57-64).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kobayakawa et al.** (US 6,064,338) in view of **Ishii et al.** (US 6,714,584).

As to Claims 6,9, with respect to Figure 3, **Kobayakawa** teaches an array antenna base station apparatus comprising:

a rake receiver (notifier) that recognizes whether or not a beam (communication) is going to be adaptively pointed (reopened) (Figure 3, label 5);

an Arithmetic Unit (memory) that stores covariance signals (a reception weight) calculated during a previous beam (communication) (Figure 3, label 33);

a demodulator, RV, that demodulates an angle of arrival (a signal) transmitted from a mobile unit (an active communication terminal apparatus) and obtains a demodulation signal (Figure 3, label 2); and

a searcher (an adaptive signal processor) that performs adaptive signal processing with the demodulation signal and calculates covariance signals (a reception weight), multiplies the demodulation signal by said reception weight, and, during a pointed (reopened) communication, multiplies the demodulation signal by the reception weight in the memory (Col. 6, lines 38-58 and Col. 9, line 45 through Col. 10, line 7);

**Kobayakawa** does not teach the following limitation:

“a memory that stores a reception weight” and “a communication that is going to be reopened”

However, it is obvious that **Kobayakawa** suggests the limitations. This is because **Kobayakawa** teaches pointing a beam adaptively, based on the arrival angle of a mobile

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station's signal, so as to pursue a user (Col. 6, lines 51-58, Col. 10, lines 4-7, and Col. 15, lines 29-31). These passages suggest that if the angle of arrival changes then beam directions are changed (communications reopened) and information has to be stored for reopening the communication.

**Ishii** teaches storing reception weights for communications that are terminated and then reopened (Col. 6, lines 40-57). Having the cited analogous art at the time the invention was made, it would have been obvious to one of ordinary skill in the art to add memory capability to **Kobayakawa's** invention for storing initial reception weights as taught by **Ishii's** invention in order to provide re-starting of communications from a terminated mobile communication.

As to Claims 7,10, **Kobayakawa** teaches the array antenna base station apparatus of claim 6, further comprising a decider that decides whether or not the reception weight in the memory is applicable to the adaptive signal processing in the adaptive signal processor in the reopened communication, wherein, when the decider decides that the reception weight in the memory is applicable, the adaptive signal processor performs the adaptive signal processing using said weight in the memory, and, when the decider decides that said reception weight in the memory is not applicable, the adaptive signal processor calculates a new weight (Col. 6, lines 45-58).

As to Claims 8,11, **Kobayakawa** teaches the array antenna base station apparatus of claim 7, further comprising a tracker that measures moving state of the communication terminal apparatus using the reception weight, wherein the decider generates the reception weight in the reopened

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communication using the reception weight in the memory and the moving state (Col. 6, lines 51-58).

***Response to Arguments***

5. Applicant's arguments filed in the 6/13/05 Remarks have been fully considered but they are moot in view of the new grounds of rejections.

***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Anderson et al.** (US 6,088,590) teach an array antenna base station which maintains mobile communication links.

**Dybdal et al.** (US 5,781,845) teach an adaptive array antenna which uses weighting coefficients to reduce interferences.

**Molnar et al.** (US 6,694,154) teach generating plurality of beams which are selected so as to maintain contact with mobile users.

7. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks  
Washington, D.C. 20231  
**or faxed to:**

(571) 273-8300, (for formal communications intended for entry)

**Or:**

(703) 306-0377 (for customer service assistance)


Hand-delivered responses should be brought to Carlyle, Alexandria, VA 22313  
(Receptionist).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Allan Hoosain** whose telephone number is (571) 272-7543. The examiner can normally be reached on Monday to Friday from 8 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Fan Tsang**, can be reached on (571) 272-7547.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2600.

  
**Allan Hoosain**  
**Primary Examiner**  
**8/16/05**